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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: David D. Kiefer et al.

Ser. No.: 10/083,973

Group Art Unit: 1761

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Examiner: Becker, Drew E.

Confirmation No.: 6900

For: **MOBILE CONTAINER FOR PERISHABLE GOODS**

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Christine M. Holmes

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES
APPEAL BRIEF

Sir:

This is an Appeal from the final Rejection of claims 9-15 of the above identified application. Appellants are concurrently filing a Notice of Appeal and this Brief in triplicate, as required by 37 C.F.R. § 1.192(a).

I. REAL PARTY IN INTEREST

The real party in interest is Carrier Corporation, the assignee of the subject invention.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences which will directly effect or be effected by or have a bearing on the decision of the pending appeal.

III. STATUS OF CLAIMS

Claims 9-15 are pending in the application. The claims under appeal are 9-15 as set forth in the Appendix below.

IV. STATUS OF AMENDMENTS

An amendment was filed after the final rejection to simply cancel claims 1-8 which had been withdrawn from consideration.

V. SUMMARY OF INVENTION

The present invention relates to a method and apparatus for introducing a ripening agent into the conditioned air of a mobile container refrigeration system and for controlling the process by selectively turning on the ripening process and then, after a period of time, turning off the process and flushing the system of any remaining ripening agent. That is, at the end of the ripening cycle a fresh air exchanger is automatically activated to vent the container of ripening agent to ambient and replace the vented air with outdoor air, after which it is automatically turned off.

Also included in the system are a plurality of drains that are closed during the ripening cycle and later opened to drain moisture from the system.

VI. ISSUES

The issues are:

1. Whether claims 9-15 and 15 are obvious over the Badalament et al. reference in view of the Briscoe Jr. et al. reference and the Cantagallo et al. reference.
2. Whether claims 13 and 14 are obvious over the above three references in further view of the Hearne Jr. reference.

VII. GROUPING OF CLAIMS

Claims 9-12 and 15 stand or fall together.

Claims 13 and 14 stand or fall together.

VIII. ARGUMENTS

Claims 9-12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badalament et al (6,012,384) in view of Briscoe Jr. et al. (6,390,378) and Cantagallo et al. (3,733,849). Claims 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badalament et al., in view of Briscoe Jr. et al., and Cantagallo et al. and further in view of Hearne Jr. (6,202,434).

The appellants believe that the claims under appeal are patentably distinctive thereover for the reasons to be discussed hereinbelow.

The Badalament reference shows a similar mobile ripening container wherein its refrigeration system includes a pair of air delivery plenums that run along side the side walls of a mobile container in abutting contact with a portion of the cargo load. That reference also shows a gas generator 116 for dispensing ethylene gas in the plenums. However, the Badalament reference does not show or suggest either 1) "a fresh air exchanger unit which in normally in a closed condition to retain the conditioned air within said container during said

ripening cycle and to exchange conditioned air with ambient air when placed in an open conditioner at the conclusion of said ripening cycle” or 2) “control means for activating the gas generator at the beginning of the ripening cycle and for automatically deactivating the gas generator at the end of a ripening cycle or 3) control means for determining when said gas generator is deactivated and responsively and automatically placing the fresh air exchanger unit in an open condition for a given period of time to vent the ripening agent from said container and automatically closing the fresh air exchanger when the ripening agent has been vented to ambient”.

The Briscoe reference describes a container system with apparatus for controlling the humidification therein. This is accomplished by the flow of a fluid from a reservoir 6 to a manifold 6, which is controlled by a control 5 in response to data received from the container 3 by way of the data line 7. Thus, the controller 5 controls operation of the humidification system 200 to activate and deactivate the humidification system 200 in accordance with the desired humidity level in the container 3. It does not show or suggest a fresh air exchanger unit or how its humidifier control unit may be used to control such a system.

The Cantagallo reference shows a refrigeration system for an insulated container with means for circulating fresh air into the interior of the container. While this is described for primarily as a means of deleting the respiration-produced gases (such as carbon dioxide) which would otherwise accumulate in the container atmosphere (see column 11, lines 57 and after), the system also provides for a turning off of the fresh air changer at the beginning of the ripening schedule and the turning of it back on after a predetermined time interval (see column 13, lines 9-17). However, as will be seen in the description in column 12, line 63 through column 13, line 8, this is accomplished by manually manipulating the shaft 65. It should therefore be recognized from this description that 1) this reference does not teach the flushing out of the ripening agent by a turning on of the fresh air changer when the gas generator is deactivated but only that would be turned off at the beginning of the ripening schedule ... then after a predetermined time interval the fresh air change arrangement is returned to the “on” or enable position. That is, it does not teach the turning on of the fresh air exchanger when the ripening cycle is discontinued. Secondly, controlling means are not provided to automatically place the fresh air exchanger in an open condition when the gas generator is deactivated nor automatically closing the fresh air exchanger when the ripening agent has been vented to ambient. Rather, in each case, it is left to the operator to determine when this is accomplished and then only by manually manipulating the shaft 65, is the fresh air change arrangement turned off. Thus, depending on the knowledge and vigilance of the operator, the fresh air changer is likely to be turned on and off at different times in relation to

the turning on and off of the ripening agent, and the operator is also likely, at times, to forget to perform those manual functions.

In his rejection of claims 9-12 and 15, the Examiner admits that Badalament et al. does not recite a control means for the fresh air exchanger but states that: "Cantagallo et al. teach a mobile container device comprising a fresh air exchanger unit (column 12, line 3 through column 13, line 16). Briscoe Jr. et al. teach a mobile container device comprising a control means for activating a fresh air exchanger, gas generator, and fan (Fig. 2, number 5; column 8, lines 12-63). It would have been obvious to one of ordinary skill in the art to incorporate the fresh air exchanger of Cantagallo et al into the invention of Badalament et al. since both are directed to mobile container devices, since Badalament et al. already included doors which could exchange fresh air (column 6, line 45), and since the fresh air exchanger of Cantagallo et al. can be used without having to manually open the rear doors of Badalament et al. for instance during transport". To this, the appellants respectfully disagree.

Firstly, the appellants question whether it is obvious to one skilled in the art to combine the features of Badalament et al. and Cantagallo et al. since the Badalament reference teaches the circulation of cooling air from a mixing chamber at the front of the vessel to passageways along the sides thereof, and then through the cargo and back to the mixing chamber by way of a central passageways as shown in Figs. 5 and 6, while the Cantagallo et al reference shows the air circulation passing from the air conditioner down into the floor channels and upwardly through the cargo. Thus, the fresh air changer of Cantagallo et al. is adapted to circulate fresh air up through the flow channels and wouldn't be obviously or readily adaptable to use in the Badalament et al container which uses an entirely different circulation system.

Further, assuming arguendo, that the fresh air changer of Cantagallo et al. were incorporated into the Badalament et al. apparatus, it would not result in the present invention. That is, it would not provide a control means for activating a gas generator at the beginning of a ripening cycle and for automatically deactivating the gas generator at the end of the ripening cycle; and for automatically placing the fresh air exchanger in an open condition when the gas generator is deactivated and for automatically closing the fresh air exchanger when the ripening agent has been vented to ambient as recited in claim 9. As discussed hereinabove, even if the Cantagallo et al feature of its fresh air exchanger are incorporated into Badalament, it would still be necessary to manually operate the fresh air exchangers and it would not be automatic and timed in a manner as claimed by the appellants.

The Examiner has also said that: "It would have been obvious to one of ordinary skill in the art to incorporate the control of Briscoe Jr. et al into the invention of Badalament et al, in view of Cantagallo et al. since all are directed to mobile container devices, since

Badalament et al already included fans, gas generator, and rear doors which could exchange fresh air (Figs. 2-4, number 60, 116; column 6, line 45), since Cantagallo et al. already included a fresh air unit (column 12, line 3 to column 13, line 16), and since the control means of Briscoe Jr. et al would have provided improved automatic control of these elements, for instance during transport". Again, the appellants respectfully disagree.

Although the Briscoe et al. reference provides in column 8, lines 51 and after that "in addition, controller 5 may be configured to control systems necessary to perform the functions necessary to supply, maintain and manage other atmospheric components, such as nitrogen, oxygen, carbon dioxide, ethylene, etc, temperature and/or electrical power or independently configured to control one or more functions such as humidity in combination with one or more other controllers to control other functions, such that the desired atmosphere in an environment is achieved and maintained for the perishable goods", it does not show or suggest how the other functions may be controlled. In this regard, the appellants strongly disagree with the Examiners conclusion that "Briscoe Jr. et al teach a mobile container device comprising a control means for a fresh air exchanger, gas generator, and fans".

Even assuming, arguendo, that the features of Briscoe Jr. et al were incorporated with the Badalament reference in view of Cantagallo et al as suggested by the Examiner, it would most likely result in a system wherein the container of Badalament would include a humidification system that was controlled as shown and described in Briscoe Jr. et al and possibly a fresh air unit that is manually turned on and off by an operator as taught by Cantagallo et al. Clearly, none of the references taken individually or in combination teach an automatically controlled fresh air system as described and claimed in the present invention. The appellants believe that it is only with hindsight that one skilled in the art may find it obvious to incorporate the features of Briscoe Jr. et al in the Badalament et al reference in view of Cantagallo to obtain the appellant's invention.

In respect to dependent claims 13 and 14, although both the Hearne Jr. reference and the Briscoe Jr. et al show a mobile container device including drains in the floor, neither of those references either by itself or in combination with the other cited references, include "control means for placing the drain means in a closed position wherein moisture is maintained within the container during a ripening cycle and an open position wherein moisture in the container is released to the surrounding atmosphere".

For the reasons discussed hereinabove, the appellants believe that the claims, under appeal, are patentably distinctive over the cited references.

IX. CONCLUSION

In view of the foregoing comments, the appellants request that the rejections of the Examiner be reversed and that the appealed claims be allowed to issue.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-0289.

Respectfully submitted,

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APPENDIX

9. Apparatus for closely controlling the temperature of perishable goods in a mobile container having a refrigeration unit for delivering conditioned air into a mixing chamber located adjacent the front wall of the container, said apparatus including:

a pair of supply air plenum chambers extending rearwardly from the mixing chamber toward the rear of the container along the sidewalls of the container that are arranged to receive supply air from said mixing chamber, one wall of each plenum being spaced apart from an adjacent side wall of said container and being formed by a stacked row of air permeable cartons containing said perishable produce,

fan means for delivering supply air from said mixing chamber into said plenum chambers at a volume rate of flow that is high enough to force the supply air into heat transfer relation with said produce contained in said cartons,

a gas generator located within the mixing chamber for introducing a ripening agent into the conditioned air at the beginning of a ripening cycle,

a fresh air exchanger unit which is normally in a closed condition to retain the conditioned air within said container during said ripening cycle and to exchange conditioned air with ambient air when placed in an open condition at the conclusion of said ripening cycle, and

control means for activating the gas generator at the beginning of a ripening cycle and for automatically deactivating the gas generator at the end of a ripening cycle; and

control means for determining when said gas generator is deactivated and responsively and automatically placing the fresh air exchanger unit in an open condition for a given period of time to vent the ripening agent from said container and automatically closing the fresh air exchanger when the ripening agent has been vented to ambient.

10. The apparatus of claim 9 wherein said fan means includes a series of fan units mounted in vertically aligned stacks at an entrance to each supply air chamber.

11. The apparatus of claim 10 wherein said mixing chamber contains a return air inlet through which conditioned air within the container is drawn by said fan means back into the mixing chamber.

12. The apparatus of claim 9 wherein each plenum chamber further includes a horizontal pressure bar secured to an adjacent side wall of the container and a movable vertical pressure bar for adjusting the length of the plenum chamber.

13. The apparatus of claim 9 that further includes drain means mounted in the floor of the container that is connected to the control means for placing the drain means in a closed position wherein moisture is maintained within the container during a ripening cycle and an open position wherein moisture in the container is released to the surrounding atmosphere.

14. The apparatus of claim 13 wherein said drain means further include a plurality of drains, each drain having remotely controlled drain valves for opening and closing said drain.

15. The apparatus of claim 10 wherein said fan means are connected to said control means which is programmed to activate the fan units in a given order.